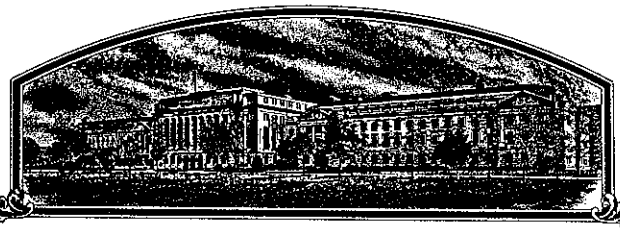
No. 8800161



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Pioneer Hi-Bred International, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT TY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (S 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'9402'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington, D. C. *this* 31st *day of* July *in the year of our Lord one thousand nine hundred and ninety.*

Attest:

Kenneth B. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Clayton Yeutter
Secretary of Agriculture

APPROVAL EXPIRES 2-28-88

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

FORM APPROVED: OMB NO. 0581-0055

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)
Pioneer Hi-Bred International, Inc.

2. TEMPORARY DESIGNATION

3. VARIETY NAME
9402

4. ADDRESS *(Street and No. or R.F.D. No., City, State, and Zip Code)*
700 Capital Square
400 Locust Street
Des Moines, IA 50309

5. PHONE *(Include area code)*
319-234-0335

FOR OFFICIAL USE ONLY

PVPO NUMBER
8800161

6. GENUS AND SPECIES NAME
Glycine Max

7. FAMILY NAME *(Botanical)*
Leguminosae

FILING
DATE May 20, 1988
TIME 9:30 ☑ A.M. ☐ P.M.

8. KIND NAME
Soybean

9. DATE OF DETERMINATION
October, 1982
January, 1986 (Increase)

FEES RECEIVED
AMOUNT FOR FILING
$ 1800 00
DATE May 20, 1988
AMOUNT FOR CERTIFICATE
$ 200 00
DATE July 20, 1990

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*
Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
Iowa

12. DATE OF INCORPORATION
1926 RPS

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
Clark W. Jennings
3261 West Airline Highway
Waterloo, IA 50703

Mary Helen Mitchell (copy)
700 Capital Square - 400 Locust Street
Des Moines, IA 50309
PHONE *(Include area code)*:

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

a. ☒ Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
b. ☒ Exhibit B, Novelty Statement.
c. ☒ Exhibit C, Objective Description of Variety *(Request form from Plant Variety Protection Office.)*
d. ☐ Exhibit D, Additional Description of Variety.
e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act.)*
☐ Yes *(If "Yes," answer items 16 and 17 below)* ☒ No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ Yes ☒ No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ Foundation ☐ Registered ☐ Certified

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ Yes *(If "Yes," give date)*
☒ No

19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
☐ Yes *(If "Yes," give names of countries and dates)*
☒ No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT
Clark Jennings
DATE May 10, 1988

SIGNATURE OF APPLICANT
DATE

FORM LS-470 (3-86) *Edition of 7-84 obsolete.*

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Attachment: **9402 Soybean** (March, 1988)

Exhibit A: Variety **9402** was selected from a BC1F4 population resulting from the following cross (L77-994 x A3127) x L77-994. This F4-derived selection was advanced to the F4 generation by modified single-seed descent. The F4 progeny plant rows of **9402** were observed and selections were made in Illinois in the summer of 1983. Subsequently, variety **9402** has undergone four years of extensive testing and purification, and has been observed by the breeders to be uniform and stable for all plant traits from generation to generation, with no evidence of variants.

Seed Hila of variety **9402** are light black in color, and under certain environmental conditions may appear gray in color. When seeds of this type are planted, they produce plants having seeds of light black in color.

Two acres of **9402** (breeders seed) were grown in 1986. 27 acres of parent seedstock (foundation seed equivalent) were grown in 1987.

Exhibit B: Variety **9402** is most similar to variety Fayette. However, **9402** is significantly shorter by 15 cm (Table 1), and significantly earlier maturing by more than 2 days (Table 2).

Exhibit E: Pioneer Hi-Bred International, Inc. is the sole, original, and first breeder of soybean variety **9402**, for which it solicits a certificate of protection.

FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (Glycine max L.)

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
Pioneer Hi-Bred International, Inc.		9402

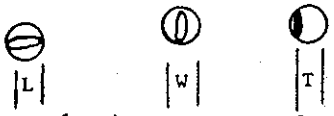
ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*
700 Capital Square
400 Locust Street
Des Moines, IA 50309

FOR OFFICIAL USE ONLY
PVPO NUMBER
8800161

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., [0][9]).

1. SEED SHAPE:

[2]



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)
4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

2. SEED COAT COLOR: (Mature Seed)

[1] 1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other *(Specify)* _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

[2] 1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17')

4. SEED SIZE: (Mature Seed)

[1][5] Grams per 100 seeds

5. HILUM COLOR: (Mature Seed)

[6] 1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other *(Specify)* _____

6. COTYLEDON COLOR: (Mature Seed)

[1] 1 = Yellow 2 = Green

7. SEED PROTEIN PEROXIDASE ACTIVITY:

[2] 1 = Low 2 = High

8. SEED PROTEIN ELECTROPHORETIC BAND:

[ ] 1 = Type A ($SP1^a$) 2 = Type B ($SP1^b$)

9. HYPOCOTYL COLOR:

[1] 1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

10. LEAFLET SHAPE:

[3] 1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other *(Specify)* _____

11. LEAFLET SIZE:

[2] 1 = Small ('Amsoy 71'; 'A5312') 2 = Medium ('Corsoy 79'; 'Gasoy 17') 3 = Large ('Crawford'; 'Tracy')

12. LEAF COLOR:

[2] 1 = Light Green ('Weber'; 'York') 2 = Medium Green ('Corsoy 79'; 'Braxton') 3 = Dark Green ('Gnome'; 'Tracy')

13. FLOWER COLOR:

[1] 1 = White 2 = Purple 3 = White with purple throat

14. POD COLOR:

[1] 1 = Tan 2 = Brown 3 = Black

15. PLANT PUBESCENCE COLOR:

[2] 1 = Gray 2 = Brown (Tawny)

16. PLANT TYPES:

[2] 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton') 3 = Bushy ('Gnome'; 'Govan')

17. PLANT HABIT:

[3] 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will') 3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

18. MATURITY GROUP: 6 12/5 12/12/88

[0][7] 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V 9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

[0] Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)

[0] Bacterial Blight (*Pseudomonas glycinea*)

[0] Wildfire (*Pseudomonas tabaci*)

FUNGAL DISEASES:

[0] Brown Spot (*Septoria glycines*)

Frogeye Leaf Spot (*Cercospora sojina*)

[0] Race 1 [0] Race 2 [0] Race 3 [0] Race 4 [0] Race 5 [ ] Other (Specify)

[0] Target Spot (*Corynespora cassiicola*)

[0] Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)

[0] Powdery Mildew (*Microsphaera diffusa*)

[0] Brown Stem Rot (*Cephalosporium gregatum*)

[0] Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

[0] Pod and Stem Blight *(Diaporthe phaseolorum var; sojae)*

[1] Purple Seed Stain *(Cercospora kikuchii)*

[0] Rhizoctonia Root Rot *(Rhizoctonia solani)*

Phytophthora Rot *(Phytophthora megasperma var. sojae)*

[0] Race 1 [0] Race 2 [0] Race 3 [0] Race 4 [0] Race 5 [0] Race 6 [0] Race 7

[0] Race 8 [0] Race 9 [0] Other *(Specify)* _____

VIRAL DISEASES:

[0] Bud Blight (Tobacco Ringspot Virus)

[0] Yellow Mosaic (Bean Yellow Mosaic Virus)

[0] Cowpea Mosaic (Cowpea Chlorotic Virus)

[0] Pod Mottle (Bean Pod Mottle Virus)

[0] Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode *(Heterodera glycines)*

[0] Race 1 [0] Race 2 [2] Race 3 [2] Race 4 [0] Other *(Specify)* _____

[0] Lance Nematode *(Hoplolaimus Colombus)*

[0] Southern Root Knot Nematode *(Meloidogyne incognita)*

[0] Northern Root Knot Nematode *(Meloidogyne Hapla)*

[0] Peanut Root Knot Nematode *(Meloidogyne arenaria)*

[0] Reniform Nematode *(Rotylenchulus reniformis)*

[ ] OTHER DISEASE NOT ON FORM *(Specify)*: _____

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[1] Iron Chlorosis on Calcareous Soil

[ ] Other *(Specify)* _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[0] Mexican Bean Beetle *(Epilachna varivestis)*

[0] Potato Leaf Hopper *(Empoasca fabae)*

[ ] Other *(Specify)* _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	Fayette	Seed Coat Luster	A3127
Leaf Shape	Fayette	Seed Size	A3127
Leaf Color	A3127	Seed Shape	Fayette
Leaf Size	Fayette	Seedling Pigmentation	Fayette

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23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
9402 Submitted	125	7.5	92	-	-	-	-	15	-
Fayette Name of Similar Variety	128	6.6	107	-	-	-	-	17	-

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A_2 in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

Table 1. Paired Comparison (Plant Height in cm) 1987 Data

YR/EXP NO/LOC	FAYETTE(X_1)	9402(X_2)	(X_1-X_2)	$(X_1-X_2)^2$
85/SJC3N1/34A	86	76	10	100
390	99	97	2	4
43A	94	91	3	9
86/MLA300/16B	117	112	5	25
18J	117	109	8	64
19A	117	112	5	25
20A	107	91	16	256
22A	107	91	16	256
26I	130	112	18	324
27H	137	122	15	225
29A	122	107	15	225
30A	117	104	13	169
86/SJA300/39C	140	127	13	169
40A	124	117	7	49
41A	109	91	18	324
86/SJC3N1/39K	119	117	2	4
43A	102	97	5	25
87/MLA400/18K	122	97	25	625
20B	94	89	5	25
21A	91	81	10	100
22A	114	102	12	144
23B	64	58	6	36
24A	81	69	12	144
26I	122	107	15	225
27I	122	102	20	400
28B	69	58	11	121
29B	86	76	10	100
30A	97	81	16	256
87/MLV300/26H	119	112	7	49
27H	130	97	33	1,089
28A	66	56	10	100
30A	91	81	10	100

Table 1. (continued)

YR/EXP NO/LOC	FAYETTE(X_1)	9402(X_2)	(X_1-X_2)	(X_1-X_2)^2
87/MLV400/22B	112	94	18	324
26I	132	107	25	625
27I	127	94	33	1,089
28B	69	51	18	324
29B	97	76	21	441
87/SJA3N1/32A	104	99	5	25
39C	127	119	8	64
42C	74	46	28	784
43A	104	76	28	784
87/SJA400/36A	97	79	18	324
40B	119	97	22	484
41B	114	94	20	400
44B	112	102	10	100
45A	102	97	5	25
87/UNA400/63A	109	97	12	144
67A	119	81	38	1,444
69A	89	76	13	169
TOTAL	**5,219**	**4,524**	**695**	**13,317**
$\bar{X}$	**107**	**92**	**15**	

N = 49

$$s_{\bar{d}} = \sqrt{\frac{13{,}317 - [(695)^2/49]}{49(48)}} = 1.213$$

$$t = \frac{15}{1.213} = 12.37 \text{ ** for 48 df}$$

Table 2. Paired Comparison (Days to Maturity) 1987 Data

YR/EXP NO/LOC	FAYETTE(X_1)	9402(X_2)		(X_1-X_2)	(X_1-X_2)^2
85/SJC3N1/390	140	138		2	4
86/MLA300/20A	133	131		2	4
86/SJA300/39C	130	128		2	4
40A	124	123		1	1
86/SJC3N1/39K	130	128		2	4
87/MLA400/18K	126	124		2	4
26I	128	125		3	9
27I	132	131		1	1
87/MLV300/27H	128	124		4	16
28A	113	112		1	1
87/MLV400/26I	130	126		4	16
27I	134	126		8	64
87/SJA3M1/39C	133	127		6	36
87/SJA400/40B	124	122		2	4
41B	118	114		4	16
87/UNA400/67A	117	116		1	1
TOTAL	**2,040**	**1,995**		**45**	**185**
$\bar{X}$	**127.5**	**124.7**		**2.8**	

N = 16

$$s_{\bar{d}} = \sqrt{\frac{185 - [(45)^2/16]}{16(15)}} = 0.493$$

$$t = \frac{2.8}{0.493} = 5.67 \text{ * for 15 df}$$

Table. 3
Paired Comparison (days from planting to maturity) 1886-1988

Year	Test	Loc.	9402	A3307	X_1-X_2	$(X_1-X_2)^2$
1986	SJC3N1	039	128	125	3	9
1987	SJA3N1	039	127	122	5	25
1987	MLV300	026	126	124	2	4
1987	MLV300	027	124	122	2	4
1987	MLV300	028	112	109	3	9
1988	MLA3N1	025	130	124	6	36
1988	MLV300	026	130	128	2	4
1988	MLV300	027	134	129	5	25
1988	MLC3N1	025	132	130	2	4
1988	MLC3N1	027	138	136	2	4
1988	MLC3N2	025	132	128	4	16
1988	MLC3N2	027	135	134	1	1
	Totals		1548	1511	37	141
	$\bar{x}$		129.0	125.9	3.1	

$$S_{\bar{d}} = \sqrt{\frac{141-((37)^2/12)}{12(11)}} = \sqrt{\frac{141-114.08}{132}} = \sqrt{0.203914} = 0.45156$$

$$t = \frac{\bar{d}}{S_{\bar{d}}} = \frac{3.1}{0.45156} = 6.86^{**} \quad \text{for 11 df}$$